

Peru, mountains and los niños

Contrafatto, M.; Thomson, Ian; Monk, E. A.

DOI:

[10.1016/j.cpa.2015.04.009](https://doi.org/10.1016/j.cpa.2015.04.009)

[10.1016/j.cpa.2015.04.009](https://doi.org/10.1016/j.cpa.2015.04.009)

License:

Creative Commons: Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)

Document Version

Peer reviewed version

Citation for published version (Harvard):

Contrafatto, M, Thomson, I & Monk, EA 2015, 'Peru, mountains and los niños: Dialogic action, accounting and sustainable transformation', *Critical Perspectives on Accounting*, vol. 33, pp. 117-136.

<https://doi.org/10.1016/j.cpa.2015.04.009>, <https://doi.org/10.1016/j.cpa.2015.04.009>

[Link to publication on Research at Birmingham portal](#)

Publisher Rights Statement:

<https://doi.org/10.1016/j.cpa.2015.04.009>

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Peru, Mountains and El Ninos: Dialogic Action, Accounting and Sustainable Transformation.

Abstract

In this paper we explore how accounts co-produced by Peruvian pupils and teachers, embedded within an activist project, helped to translate sustainability into something familiar that their community could engage *with* and act *for* (Contrafatto, 2013). Creating this closeness to, and everydayness of, sustainability was seen to be critical for community praxes. This paper presents our justification for including these children's accounts in the assemblage of practices that make up the social accounting project. We argue that it is important that sustainability accounts codify, using culturally relevant media, language, objects/symbols, the causes of a community's unsustainability in order to enable the exploration of more sustainable ways of living. The co-production of these accounts with those seeking to provide locally relevant solutions is also an important aspect of sustainability accounting. This research contributes to social and environmental accounting by exploring theoretically and empirically how dialogically-inspired accounts could be used within activist projects to improve the sustainability of communities.

Key words:

Activism; sustainability accounting; dialogic theory; mediating instruments; case study; Peru.

Peru, Mountains and El Ninos: Dialogic Action, Accounting and Sustainable Transformation.

“The dialogue, as the encounter among men to “name” the world, is a fundamental precondition for their true humanization” (Freire 2005, p. 137)

1. Introduction

The investigation of empirical sites where activists¹ engage with communities to bring about sustainable change offers important insights into designing (and developing) accounting practices with greater potential to address the social, economic and ecological problems confronting our planet (Bebbington & Thomson, 2007; Cooper, Taylor, Smith & Catchpole, 2005; Crossley, 2003; Dey et al., 2014; den Hond & de Bakker, 2007; Gallhofer et al., 2006; Gray, 2013, Gray et al., 2014; Harte & Owen, 1987). The ability of calculative accounting practices to resolve these issues has been extensively criticised (e.g. Cooper, 1992; Cooper et al., 2005; Everett, 2004; Gray, 2010; Neu, 2000, 2006). Nevertheless, we would like to explore the potential of alternative forms of accounting that rely less on calculative rationality and are designed specifically to enable social change. In the present paper, we examine how accounts, co-produced by teachers and pupils, mediated (Miller & O’Leary, 2007) between high-level political and scientific debates on sustainable development and the life in Lucre, a rural Peruvian town in the Andes mountains. These accounts, embedded within an activist project, helped to translate sustainable development into something familiar with which the community² could engage *with* and act *for* (Contrafatto, 2013). This research contributes to the development of social and environmental accounting practices by analysing, theoretically and empirically, how dialogically-inspired accounts can be developed and used within activist projects to improve the sustainability of communities (Freire, 2005; Kneip, 2013).

Dialogic and other theories of activism (den Hond & de Bakker, 2007; Kneip, 2013) challenge our preconceptions as to what constitutes an ‘account’ and can therefore be considered part of the universe of all possible accountings through which important stories and events are narrated

¹ In this paper we use a broad definition of activism (and activists) to indicate the actions of any individual who participates in some form of organised interventions intended to, directly or indirectly, trigger social, ecological or political transformation to the conduct (or intentions) of others, who are considered to be problematic. We are aware of a contradiction in Freire’s use of “activism”, as action without reflection, and the more contemporary generic definition used in this paper.

² We use Freire’s notion of community, which is a social group facing a common oppressive force rather than people living in a common geographical space.

(Contrafatto & Bebbington, 2013; Gray, 2010; Gray, Brennan & Malpas, 2013). This paper draws on research on the history of accounting (Napier, 1993; Solomon & Thomson, 2009), visual images in accounting (Jack, et. al. 2013), and the use of accounts by activists (e.g. Contrafatto & Bebbington, 2013; Cooper, et al. 2005; Gallhofer et al., 2006; Dey et al., 2014) to justify our inclusion of these dialogically-inspired representations of problems and solution as part of the social accounting project (Gray, 2010).

In the present paper, we provide a narrative on how dialogically-inspired accounts (Thomson & Bebbington, 2004, 2005; Freire, 2005) were constructed in an activist project³, which was promoted and supported by GlobalEd (a small community based organisation), to make visible and mitigate the risks and threats (Miller et al., 2008) associated with unsustainable thinking and actions to the community of Lucre. We analyse how GlobalEd and the local activists used dialogic-inspired⁴ accounting practices (Bebbington et al., 2007; Dillard & Roslender, 2011) to “educate the community to build sustainable living through educating the children” (Teacher in Lucre). These accounts took many forms, including: pictures, photographs, calendars, videos, stories, songs, exhibitions and plays. These accounts were very different from the corporate social and environmental accounts that dominate social accounting research. However, we suggest these accounts, which represented the children’s (i.e. el ninos) codifications (Freire, 2005) of unsustainable aspects of life in Lucre, are worthy of consideration as these were influential in enabling small, but important changes.

In our study, of particular interest is how these accounts mediated between the high-level political and scientific debates on sustainable development and everyday life in Lucre. These accounts both confronted the populace with threats to their community and legitimated actions to protect and sustain their way of life. In exploring these dialogic-infused dynamics, this paper provide insights into the potential of exploring possible links between dialogic pedagogy, education for sustainable development (Sterling, 2001) and accounting for sustainable transformations (see for example, Bebbington & Larrinaga, 2014; Gray, 2010, 2013; Gray et al., 2014; Miller et al., 2008)

³ Drawing on Freire’s understanding, a project is a form of activism carried out with communities in the process of organising and enabling these communities to transform themselves. (See Freire, 2005, p. 54).

⁴ In the present paper, we use the term dialogic to include most of the attributes of Dillard and Roslender’s polylogic accounting. In our analysis we returned to Freire’s seminal text ‘Pedagogy of the Oppressed’ and concluded that in the context of this text there was very little difference between his use of dialogic in 1972 and the later term polylogic. A more detailed analysis of the differences and similarities of these two terms is beyond the scope of the current paper.

The remainder of this paper is organized as follows. The next section describes the theoretical framework used to analyse the empirical evidence and to construct our study narrative. The third section outlines the research methods and the background to the case study. In the fourth section, an analysis of the empirical evidence is undertaken. Finally, concluding remarks are provided.

2. Sustainable Transformation, Accounting, Codification and Dialogic Activism

The unsustainable state of our planet (e.g. IPCC, 2013) requires an urgent consideration as to what would constitute effective accounting for sustainable transformation (Bebbington & Larrinaga, 2014; Gray, 2010, 2013; Gray et al., 2014). In this paper, we distinguish between accounting (and accounts) of sustainability and accounting (and accounts) *for* sustainable transformation. Accounting *for* sustainable transformation is defined as a set of accounting practices (which embraces and meets the challenges posed by sustainability), promoting and supporting the transition towards more sustainable ways of organizing human life (Bebbington et al., 2007; Contrafatto, 2013) rather than simply making visible the (un)sustainability of a corporate entity. It is our contention that useful insights emerge from conceptualising accounting for sustainable transformation as a form of codification within projects of dialogic change, i.e. as a type of dialogic codification (Freire, 2005). Thomson & Bebbington (2004, 2005) discussed the characteristics of dialogic-inspired accounting in order to critique corporate social reporting practices. We wish to build on their work by examining other accounting-like practices within Freire's theory of dialogic action with potential relevance for sustainable transformation and sustainable accounting.

Dialogic codifications and dialogic accounting share the objectives of: consciousness-raising as to the unsustainability of our current socio-economic-cultural systems; problematising un-sustainable modes of thinking and acting; redefining individuals' gifts and skills; improving decision making processes; and exploring feasible sustainable futures (Bebbington et al., 2007; Dillard & Roslender, 2011; Gray, 2010; Gray et al., 2014; Lehman, 2001, 2002). However, unlike conventional corporate social reports, dialogic codifications and dialogic accounts are not intended to hold the community to account for their actions, but produced by the community for the community in order to transform their future. As explained by Freire (2005), dialogic codifications are not simple depictions of community life, but representations of the societal structures and 'thought-languages' that constrain their actions. These dialogic codifications provide "meaningful re-presentations of the [concrete] existential situations" of the community (Freire, 2005, p.105).

Codifications allow the community to explore and to challenge the legitimacy of the ‘thought-language’ that shapes their way of life and restricts the possibility of change. Codifications also present to the community new possibilities in order to stimulate a dialogue as to their suitability and feasibility for local transformative action. From this perspective, codifications can be conceived as accounts of the problematic ways of thinking (and doing) and accounts of possible solutions. In particular, codifications expose the nature and contradictions of the impediments (physical, cultural and intellectual), which Freire calls “limiting situations and factors” (Freire, 2005, p.99), in order to overcome these impediments through a series of limit-acts⁵.

Conceptualising accounting for sustainable transformation as a form of dialogic codification poses a number of challenges to the development of accounting-sustainability practices (Thomson et al., 2014). One of these challenges concerns defining what would constitute a dialogic accounting entity. Most social and environmental accounting entities are normally associated with a corporation or other type of social institution. In dialogic activism, accounting entities are more likely to be associated with problematic aspects of a community’s everyday life. Dialogic accounting entities are often the obstacles that the community wishes to overcome as part of their transformation process. Other challenges relate to media, languages and symbols used in the accounting process. Hence, evaluating the potential impact of dialogical accounting (and accounts) for sustainable transformation requires an understanding of the activism within which they are an integral part, as well as analysing their structure, media and content. Figure 1 is our attempt to map the complex inter-related stages of a generic dialogic transformative project.

[Insert Figure 1 about here](#)

Dialogic activism involves four key phases: project design; problem posing; solution exploration and implementation. The preparation of accounts, their interpretation and the creation of new accounts to inform subsequent dialogue and action are critical processes within all four phases. As mentioned earlier, these accounts differ from conventional accounting in a number of ways, including how these accounts are interpreted by stakeholders.

⁵ Freire (2005) states that a limit-act is praxis that seeks to overcome oppressive situations that limit the freedom of the community to act.

Sub-sections 2.1 and 2.2 explore in more detail the issues identified above and offer potential solutions derived from our analysis of Freire's seminal text, "The Pedagogy of the Oppressed" (Freire, 2005). We conclude section 2 with our framework (Table 1) that identifies the attributes that we consider part of dialogic accounting (and accounts) for sustainable transformation.

2.1 Dialogic Action and Sustainable Transformation

It is not possible to summarise the full richness and complex nuances of Freire's theory of dialogic action in a single paper. However, we do feel a short summary will help locate our subsequent theoretical and empirical analysis.

Dialogic action, with the intention of sustainable transformation, requires the community to unveil unsustainable thinking as an oppressive force to themselves, not the external imposition of sustainable thinking and pre-packaged sustainable solutions. Sustainable transformation requires the restoration of power to communities in order to resist the threats and hazards from unsustainable 'thought-language' and action (Cooper et al., 2005; Gray et al., 2014; Lehman, 2002). This restoration of power and empowerment of community is a central component of dialogic activism. Dialogic activism is predicated on enabling communities to take control of their thinking and recognise their thinking as legitimate. This, in turn, grants communities the confidence and power to self-legitimate their actions.

However, there is the paradox of how to enable a community, particularly one enmeshed in the oppression of unsustainable thinking and actions, to recognise the need for change and their capacity for sustainable transformation. How does a community become aware they are suffering from unsustainability? This awareness of the risks and threats of unsustainable thinking and actions is critical to the initiation of any dialogic activism project. In the context of sustainable transformation, this often requires the intervention of external activists. These activists can take different institutional forms. These could include, for example, regional/national public sector organisations, supranational organisations (e.g. World Health Organisation, UN), large multinational NGOs (e.g. Greenpeace, OXFAM), local NGOs or self-organised community groups. In situations where powerful external activists seek to initiate projects of change or intervene in existing projects, there is always the risk that they seek to impose their values or pre-packed generic solutions. This colonisation of local communities by external experts would contradict the spirit of dialogical activism. The role of the external activists in dialogic projects is not to dominate or take

control of the project (Freire, 2005). Rather their role involves community engagements to co-problematise oppressive aspects of life in the community; inspiring the emergence of local activists; bearing witness to the community's oppression from unsustainable thinking and action; and supporting the design and implementation of transformative projects.

Initially when external activists approach the community their objective is to facilitate the development of a shared awareness of life in the community and their problematic issues in order to develop mutual understandings of possible areas for transformation. It is important that early in this process, external activists seek volunteers from the community to participate in the design of any emerging project. As explained by Freire (2005), it is essential to constitute a "working group" that includes external as well as local volunteers. These volunteers are tasked with assembling materials that represent the history, culture, social institutions, work, leisure and other everyday routines of their community. The role of the external activists is to act as sympathetic and empathetic observers dedicated to understanding the living code of the community from the perspective of the community. Freire (2005) maintains that the search of a sympathetic⁶ dialogue with the community is a key aspect of any dialogic project. It is through these sympathetic relationships that external activists (e.g. educators) are able to connect, co-participate and progressively comprehend the world of the community (Freire, 2005). As mutual understandings develop through dialogue and observations, the external activists, in conjunction with the local activists, compile an initial series of accounts (codifications) of key aspects of the community.

From this perspective, dialogic accounts for sustainable transformation should attempt to represent, i.e. "codify" in Freire's terms, the contradictions of the unsustainability/sustainability dialectic as something familiar that the community can engage with and act to resolve (Contrafatto, 2013). Creating a closeness to, and everydayness of, sustainability through dialogic codifications, or accounts, is critical to initiating and enabling transformative praxis. These accounts become the focus of discussions with as many members of the community as possible. These initial accounts are subject, in Freire's (2005) words, to systematic "decodifications"⁷, i.e. interpretations and re-made by the community in dialogue with the external activists. Through a process of dialogue a new

⁶ The word sym-path^y is used in its etymological sense to mean "the sharing of the same feeling", from (syn) "together" and (pathos) "feeling".

⁷ As contended by Freire (2005, p.105), decodification represents "the critical analysis of a codified situation. The decodification of an existential situation normally results in a transition from the abstract to concrete. This implies recognizing the subject in the object [the concrete existential situation] and the object as a situation in which the subject is located".

series of accounts, that represents how unsustainable ‘thought-language’ and actions threaten and oppress the community⁸, are co-produced.

In the design phase, external activists could use their experience and expertise to demonstrate the unsustainability of the community and the possibilities of mitigating or avoiding future negative consequences. In dialogic encounters, external activists reveal to the community that unsustainability is a real, but resistible, threat to their way of living. This revelation requires accounts (codifications) of the problematic ways in which unsustainability manifests in the community. As part of this process, activists could provide evidence of their personal experiences of sustainable transformations in their own life and in other communities. Providing accounts of the activists’ personal struggle against similar unsustainable thinking legitimates their role and ability to inspire the community to seek their own transformation. These accounts of successful (or unsuccessful) change provide evidence of the benefits of sustainable transformation and hope for a more sustainable future for the community. These accounts, co-produced by the external and local activists, of the unsustainable present and accounts of a possible sustainable future of the community will form the conceptual scaffolding of any subsequent sustainable activism. Thus, from the perspective of Freire (2005), these external activists (e.g. educators) act as catalysts who, through dialogue with the community, encourage and lead the process of problematising of the sustainability of the issues at stake.

It is important that external activists respect and understand the community’s past actions in context of wider oppressive structures and thinking. Dialogic engagements and codifications should not seek to punish or blame the community for past unsustainable decisions or actions. In other words, accounts of unsustainability are not designed to shame individuals but to explore the reasons why individuals were forced or socially conditioned to act in certain ways. The power of accounts (codifications) lies in inspiring the community to understanding what they know and how theories of sustainability may (or may not) be relevant to them.

Once the community begin to develop *faith* in their own abilities, they can begin to see how to transform their world. Paraphrasing Freire, dialogic activism projects are motivated by “a profound

⁸ It is possible that this initial dialogic engagement will not result in an acceptance by the community of the risks and threats of unsustainable ‘thought-language’ and action. In this case, the activists should not seek to impose their values and withdraw from this specific project. Activists need to critically reflect on the reasons for this lack of dialogic synthesis for future projects of activism.

sense of love and faith in the [oppressed] people: a faith in their possibility to be more” (Freire, 2005, p.90). Therefore, an important role of dialogic activists is to inspire faith and capacity within the community to “make, create and re-create” (ibid. p.90) their life. Cultivating the creative expression⁹ of the local activists and the wider community will facilitate their effective participation in the transformation. This creative expression needs, also, to be cultivated in the preparation and interpretation of accounts. This requires creating the capacity within the community to construct their own accounts in a way that makes sense to them and their situation.

External activists must be prepared to let go and withdraw as much as possible after their involvement in the design stage and trust the community to make decisions. The community should not feel obligated to account to activists for their actions; however, they may choose to do so as part of mutual knowledge exchange process between equals. As emphasized by Freire, (2005):

“Trusting the people is the indispensable precondition for revolutionary change. A real humanist can be identified more by his trust in the people, which engages him in their struggle, than by a thousand actions in their favour without that trust” (Freire, 2005, p.60).

Once an activism project moves from the design stage into respectively the phases of problem posing, solution exploration and implementation, the central role and function of accounts is maintained. The control and responsibility about the production, design and interpretation of these accounts moves from a collaboration between external and local activists to a collaboration between local activists and the wider community. This shift in control over accounts reinforces the importance of choosing appropriate dialogic accounting entities, channels of communication and modes of representation. Dialogic accounts are intended to capture moments in the life of a community expressed in ways that will allow an individual from that community to situate themselves and critically explore the factors, physical and conceptual, that created that moment. However, it is important that each account contributes to an evolving portfolio of accounts that systematically represents the problematic consequences of unsustainable thinking and actions and determines possible ways in which the community can transcend its unsustainable limiting situations (Freire, 2005).

⁹ Creative expression is used to describe a set of practises that illustrate abstract concepts or ideas in a more concrete fashion. These practices allow individuals or groups to personalise their understandings of concepts or ideas and integrate their emotional and intellectual reactions.

An important purpose of the locally produced accounts is to enable dialogue within the community as to whether sustainability thinking and actions could be practically and beneficially applied to the community. This translation of abstract sustainability thinking into local contexts is important in transformative projects and normally involves an object (a “mediating instrument”, using a term adopted by Kurunmäki & Miller (2011, p.222)) to construct points of commonality between sustainability thinking and local practices. Therefore, any locally produced accounts for sustainable transformation will normally be constructed around locally relevant objects (i.e. entities) that can create compelling, understandable and culturally sensitive representations of the consequences of unsustainability. These accounting entities would normally originate from the everyday imperatives of community life and not the abstract high-level political and scientific debates associated with the contradiction between unsustainability and sustainability. In order to be effective, these dialogic accounting entities also have to be able to function as ‘inter-mediators’ (mediating instruments), i.e. something which intervenes to link and establish a middle position between two or more heterogeneous things in different communities (Miller & O’Leary’, 2007, Wise, 1988; Wise & Smith, 1989a, b, 1990). Effective mediating instruments are often objects that play a visible part in different contexts. For example, Wise (1988) describes how in the UK the steam engine operated as mediating instrument in the integration of physical science, political science, engineering disciplines and business in the 19th century. Actors from different communities (e.g. biology, chemistry, economics, commerce and physics) were able to relate to and understand the steam engine on practical and theoretical levels and accepted it as offering a plausible translation of the theories, practices and values of others. In doing so, the steam engine thus operated as an effective mediating instrument (Wise & Smith, 1989a, b; 1990).

Dialogic accounting entities act as channels between community life, sustainability policies and sustainability science (Gray, 2013, Larrinaga & Bebbington, 2014; Thomson et al., 2014). These accounts have to be able to construct linkages between different communities establishing spaces for concepts, values and practices to come together and interact creating the possibility of change. These accounts represent windows that allow members of different communities to observe, interpret and understand each other (Wise, 1988). For example, the changing shape of a snow-cap on a mountain could be used by local communities to understand the concept of global warming and by climate scientists to measure the local impact of global warming. How effectively these accounts act as mediating instruments is critical to any dialogic activism project as they play a powerful constitutive role in any emergent transformation (Kurunmäki et al., 2003; Miller et al.,

2008). As noted by Miller et al., (2008), understanding how, and the extent to which, these varied and often localised accounts emerge and interact to facilitate these interactions and mediations is crucial for future research.

Whilst there are certain commonalities between the objectives of accounting for sustainable transformation and dialogic codification, there are significant differences in the accounting (codifying) processes, accountants and accounts. The fundamental difference is that dialogic codifications are co-produced by external activists and communities who share an intention to critically unveil their shared realities through reflection and action in a struggle for mutual humanisation. A dialogic codification is a systematic representation of the things members of a community want to know more about, rather than what activists think the community wants to learn about. Dialogic codifications emphasise the transformative and creative potential of all humans in producing functional goods, art, music, shaping their environment, establishing social institutions, theories, culture, their own history and their own future. Dialogic codifications emerge from encounters between activists and the community. Unlike conventional accounting, which tends to hide its conceptual underpinnings, dialogic codifications explicitly expose

“the thought-language with which men and women refer to reality, the levels at which they perceive that reality and their view of the world” (Freire, 2005, p. 97).

2.2 Characteristics of Dialogic Accounting and Accounts for Sustainable Transformation

We contend that accounting for sustainable transformation has to inform praxes¹⁰ leading to less un-sustainable modes of living. In particular, allowing communities to translate sustainability concepts into their everyday actions, values and cultures to enable local dialogue, co-operative engagement and transformation are critical attributes of dialogic accounting (Bebbington et al., 2007; Dillard & Roslender, 2011). Accounting for sustainable transformation practices includes accounts produced by at-risk communities using their words, images and stories that make visible and challenge the reasons for the problems they face. The role of these dialogic accounts is to facilitate communities to develop their understanding of the causes and consequences of unsustainable thinking and actions *as a sine qua non* for locally relevant praxes (Contrafatto, 2013). Dialogic accounts should also present a vision of how sustainable thinking and action could transform the community, and demonstrate the feasibility of sustainable transformation. If the role

¹⁰ As explained by Freire (2005), praxis is the synthesis of action and reflection. Note praxes is the plural of praxis.

of accounting for sustainable transformation is to promote, paraphrasing Freire (2005), the dialectical synthesis of critical reflection and action (Thomson & Bebbington, 2005) then they need to resolve the contradictions between unsustainable and sustainable development.

It is critical that dialogic accounts document and represent the living code of a community as it evolves and responds to emerging risks, threats, hazards, knowledge and opportunities. It is in the encounters between the different ideas, cultures, objects, symbols, activities and individuals, which constitute the dialogic project, that dialogic accounts are formed and reformed. Table 1 is our attempt to summarise, what we contend to be, the essential attributes of dialogic accounts that can be used to evaluate the transformative potential of assemblages of sustainable accounts.

Insert Table 1 about here

This section has provided a theoretical framework, drawn on the Freire's dialogic action theory, to evaluate the transformative potential of accounting practices when conceptualised as a form of dialogic codification. The theoretical insights discussed in this section are used to analyse the empirical evidence and to construct a narrative of the process of implementing and embedding sustainability issues into a vulnerable community and the role of the locally co-produced accounts in this process. The following section outlines the research methods adopted and provide further details on the community and action project.

3. Research Design and background to the study

3.1 Research methods and data collection

The empirical evidence analysed in this paper is drawn from a project that was part of other programmes intended to educate people to live sustainably. This project was instigated by GlobalEd (Global Education for Sustainable Development), a small community interest organisation based in Lima (Peru) and the South West of England, "dedicated to supporting the development and promotion of Education for Sustainable Development" (GlobalEd, 2011)¹¹. GlobalEd has

¹¹ At the core of GlobalEd's long-term activism programme lies the aspiration to enable, through education and engagement with communities, transformations towards sustainable citizenship. GlobalEd provides, in particular, professional and pedagogic support to educational institutions that are involved in teaching and learning Education for Sustainable Development. In addition, GlobalEd promotes partnership between (educational) communities in Peru and the UK to facilitate a deeper understanding of sustainability and its global dimensions (see GlobalEd's website).

engaged with several institutions (including, NGOs, charities, activists, primary and secondary schools, Universities and responsible business organizations) in Peru and the UK on issues related to sustainability, education and community-development. In the present paper, we consider a specific project of activism in a vulnerable community, which involved a primary school (school, hereafter) situated in Lucre a rural-community in the Peruvian region of Cusco, aimed at introducing environmental and sustainability issues into the curriculum (hereafter the Lucre Project). Figure 2 illustrates the contours of the Lucre Project and in particular the links with GlobalEd and other subjects.

Insert Figure 2 about here

The focus of our analysis is how environmental and sustainability issues were introduced, taught and embedded in the practices of the Lucre school and wider community. In particular, we are concerned with how accounts, co-produced by the schoolteachers and pupils, helped to mediate between sustainability and the local community in order to promote change to everyday practices in Lucre.

A longitudinal case study methodology (Creswell, 1998, Ahrens & Chapman, 2006, Silverman, 2011) was adopted with most of the fieldwork conducted in 2008 and 2011. Over this period, one of the authors visited Lucre on 2 separate occasions, in April 2008 and in August 2011. The first visit lasted five days and the second visit one week. In May 2013, a further interview with the Director of GlobalEd was conducted to discuss how the project had developed since 2011 and to reflect on the effectiveness of the project. Figure 3 depicts the timeline of our involvement with the Lucre Project.

Insert Figure 3 about here

Empirical evidence was collected through a series of methods (see Table 2 for more detail): i) observation within the school and in the wider community; ii) semi-structured interviews with teachers and pupils of the school; iii) analysis of the available documents (e.g. reports; newsletters; website; teaching resources; calendars) and iv) semi-structured interviews and informal talks with the director of GlobalEd.

Insert Table 2 about here

The interviews, conducted through the medium of Spanish and English languages, were all transcribed and (where necessary) translated into English. Photographs were taken and diaries of observation were kept during the fieldwork in Peru. The transcripts, notes and other empirical data collected through observations, interviews and other methods, were interpreted through the theoretical insights discussed in Section 2 to construct a narrative of the process of implementing and embedding sustainability issues into the local community. In this paper, we focus our analysis on exemplars of the dialogic codifications of Lucre's unsustainability and possible solutions of these accounts.

3.2 The project background

In this section, we provide a brief description of the historic, socio-geographical and economic context of Lucre in order to frame our analysis for the reader. This brief analysis of the case context helps understand how and why the Lucre Project was initiated and allows for an evaluation of its impact on the community.

Due to its geographical location (between the Equator and the Tropic of Capricorn) and its specific geo-morphological conditions, Peru is characterized by multifarious climatic conditions that have hosted a variety of ecosystems (e.g. rainforests, mountains, glaciers, deserts, canyons, oceanic coastal regions). In particular, the Andean Mountains act as a watershed between the wet and humid region on the east and the desert area in the west. It is in the western region, and mainly in the Pacific coastal strip, that most of the population lives and where several big cities are situated. The water upon which these cities, and the people living in the surrounding areas, rely on is provided by the rivers flowing down from the Andes. In particular, during the dry season these rivers are supplied by water that originates from the glaciers and snow-caps of the Andes (Hennessy, 2005). Peru, whose estimated population is approximately 29.5 million, is a developing country with a high Human Development Index but also a high poverty rate (UNDP, 2010). Although poverty has significantly decreased since 2001 when the rate of poverty was 54%, it remains a serious problem as approximately 30% of the population live in poverty (Larepublica, 2010). Although the Gross Domestic Product (GDP) has constantly increased since 2002 (World Bank,

2011), the inequality in income and wealth distribution is still relatively high with a Gini Index¹² of 49.6% in 2009 (UNDP, 2011).

For centuries the life and prospects of Peruvians has been based on a fragile and uncertain balance between mountains, rivers, water and people. This precarious equilibrium is now at risk, due to the effects of climate change. Peru is the third most “at risk” country after Honduras and Bangladesh in relation to the effects of climate change and global warming (Cigarán, 2004) due to intense heat and irregular rainfall (Mark, 2009). The increase in temperature is likely to be one of the major factors that have caused the observable retreat of Peru’s glaciers (Hennessy, 2005) and the melt of snow-caps of the Andean mountains. The speedy decline and significance of the glaciers’ retreat has increased the risk of avalanches and landslides (Hegglin & Huggel, 2008). In addition, in more recent years testimonies of anomalous and irregular rainfall, which has impacted on farming and lives of people particularly in rural areas such as the region of Cusco (where Lucre, and our study, is located), have been reported (Hofstadter, 2009).

The interaction of the Andes, the Amazonian lowlands, and the Pacific Ocean significantly affects the Peruvian eco-systems and the lives and prospects of Peruvian people. Each of these factors has represented, and still represents, a source of life and threat to the continued existence of the people of Peru. As well as the Andes supplying the water essential for life in Peru, they also provide stone essential for shelter, infrastructure and crafts. In Peru, mountains are respected and venerated (see also Fraser, 2009). Stone, a symbol of protection, was considered by Incas as something precious and noble to be used to build temples or carvings for the veneration of Gods or ‘huacas’ (sacred things). The cultural reverence of stone is still visible in Cusco (the ancient capital of Inca Empire) and surrounding area (e.g. the world heritage site of Macchu Picchu).

Lucre is a rural town, with a population of 10,000 people, in the south of the Cusco Region in the Andean highlands. Geographically, the town lies around the territory where the Inca civilization emerged and developed during the 14th and 15th centuries. The primary economic activities of the region are agriculture, extractive industries and tourism. In Lucre, there are three schools: a pre-school nursery, a primary school and a secondary school. Having provided a brief description of the

¹² The Gini index measures the inequality among values of a frequency distribution and it is commonly used to measure the inequality in the income or wealth distribution. A high Gini coefficient indicates high maximal inequality among values (where 100 on a percentile scale represents maximum inequality). See Gini (1936) for a more detailed description of the index.

context of our case study, we will now present our analysis of Lucre's primary school Project to transform their community through sustainability education.

4. Teaching and embedding Sustainable Development in Lucre.

In the present section we examine the central roles dialogic codifications/accounts played in the key phases in the Lucre Project to transform the sustainability of life in Lucre. We use our overview of generic dialogic processes (Figure 1) and attributes of dialogic accounting/accounts (Table 1) to structure our analysis of the case. Table 3 provides our summary of the '*who, how, when and why*' associated with accounting in this dialogic project.

[Insert Table 3 about here](#)

The following subsections will provide more detail to support the overview provided in Table 3.

4.1 Teaching and embedding Sustainable Development in Lucre: Pre-design encounters

"You should consider the context where we are [...]. Peru, and in particular these areas of the highlands, are suffering more than others do, the effects of climate change [...]. We see that the mountains around us have less snow... and less water [...]. This is a threat for all of us" (Teacher in Lucre, 04/2008)

The peculiar geographical context in which Lucre is located, along with the visible changes in the natural and climatic conditions of which the locals were concerned, are important factors to understand how the Lucre Project developed. In particular, we argue that the local community's perceptions of risk and uncertainty were important in establishing the need for the Lucre Project. The origins of the Lucre Project can be traced back to an initial meeting between the school and Tom Jolly, an educator in sustainable development and founder (and director) of GlobalEd, in relation to another activist project, Project Colibrì, in which Tom Jolly was involved. Project Colibrì was a charity initiative, which began in 2003, supporting the integration of homeless children of the Cusco region into local communities and local schools. It was through Project Colibrì that contact between Tom Jolly and the school, in particular the head teacher, was made:

“[...] we were introduced to the project of teaching sustainable development in our primary school through Project Colibrì in which Tom was involved [...]. This project [Colibrì] changed the consideration that we previously had of [these] street children. At the beginning, the inclusion of these kids in the classes was quite difficult, because they had unique problematic issues that we needed to deal with [...]. However, we started to see the kids from a different perspective; and we realized how important it was to give them an opportunity” (04/2008, Head teacher in Lucre).

It was through regular interactions regarding the children of Project Colibrì that a sense of communality (i.e. sharing similar concerns) developed between Tom Jolly and the schoolteachers. In other words, the interactions associated with Project Colibrì opened up a sympathetic dialogue (Freire, 2005), i.e. a sense of fellow feeling with regard to the children. From the perspective of Freire, this sympathy-based dialogue was *a sine qua non* for the emergence of mutual trust and closeness (between Tom Jolly and the schoolteachers) that extended beyond the Project Colibrì’s practicalities.

It was through this developing relationship of mutual trust that an initial interest for, and some curiosity about, the project of teaching sustainable development in the Lucre primary school emerged. As explained by Tom Jolly:

“During one of my first meetings with the headmaster, I was asked to describe what my occupation was. I explained that I am an educator in Environmental Education [...]. At that time, I knew that primary schools needed to comply with the requests of the Peruvian Ministry of Education to include environmentalism in taught subjects [...]. For these reasons, on the first visits, I was careful not to use the word sustainable development but just environmentalism. Because I am a good fisher and I know how and when to use the right bait [...]. That is what I mean by *nudging*, i.e. the idea to help them [school and community] to see [these] things from a different perspective” (05/2013, Tom Jolly, Director of GlobalEd, emphasis added).

In this pre-design phase, Tom Jolly sought to attract the curiosity of school representatives for an initiative that, although was still undefined in its content, seemed to be “novel and interesting”

(04/2008, Teacher of Lucre) and potentially useful to conform to ministerial programmes. This led to the initiation of dialogue on this topic over a long period and

“it was only after 3-4 years that I think they really realised the importance of our [activism] programme and not only of the [Lucre] Project. Ultimately, what I really want[ed] is [was] to help them to gain confidence and to find their own way about these issues.” (05/2013, Tom Jolly, Director of GlobalEd).

In other words, Tom acted, using his own words, as a skilful “fisher”, not to catch fish, but rather to help them “find their own way” toward safe waters. In this sense, the initial role of Tom was, through a long period of dialogue, to “nudge” the school community towards problematising their unsustainability. He was able to provide witness, through his experience, knowledge and charisma, and testify as to the problems with the sustainability of Lucre and to provide inspiration and legitimisation for the schoolteachers’ to initiate some form of action. In this pre-project design stage, Tom sought to engage with (and encourage) the school community to build their confidence and capacity to engage with the problem of Lucre’s unsustainable development.

Tom’s initial interventions, however, created discomfort and some misunderstanding. During these pre-project discussions, the teaching of sustainability development and possible impacts were not fully understood by schoolteachers. A few concerns arose about the feasibility of introducing sustainability into the curricula of the school:

“At the beginning, when Tom came here to speak about the project of teaching sustainable development, we did not understand what he was talking about. This project seemed out of our reach...” (04/2008, Head Teacher in Lucre)

As these informal dialogues between Tom Jolly and the school continued, they uncovered a number of ways that unsustainable thinking and actions were negatively impacting on Lucre. These dialogues began to legitimate sustainable development as an issue relevant to Lucre and relevant to the teaching in the school. Key to these dialogues was the use of examples from Lucre’s physical environment and history to illustrate and problematise unsustainability. Unsustainability emerged as a threat to Lucre and limiting the achievement of the teachers’ aspirations for the future of the

children and Lucre. From these dialogues, the scope and potential of the Lucre Project began to be mutually understood.

“After a few talks with Tom, I/we understood what the [Lucre] Project was about. And I/we started to realize how relevant it would be for a context as Peru, and Lucre [...]. I always had the hope that through teaching and education it would be possible to promote a change, from a social and cultural point of view, in the community where we live [...]. The project seemed, at least to me, the right one” (04/2008, Head teacher in Lucre).

Central to these pre-design project dialogues was the importance of locating sustainability/unsustainability in what the schoolteachers repeatedly referred to, during interviews, as *their* environment: i.e. the natural and socio-economic context of Peru and Lucre. It appears that this focus on “their” (specific) rather than “the” (generic) environment/context was key to understand how and why the Lucre Project developed. As discussed previously, their environment was perceived as a source of life. On the other hand, it also posed major risks, uncertainty and potential hazards. The state of the natural environment in Peru and, in particular, of the Andean highlands created serious concerns in some of our interviewees.

“You have to understand that for us, for the people of Lucre, in particular, the respect of the natural environment where we live is essential, because the land and the mountains provide us with the daily necessities (i.e. food and water) we need to live with...” (04/2008; Head teacher in Lucre).

Tom Jolly also expressed similar considerations:

“The life of the community [in Lucre] is very much dependent on its local and surrounding natural environment, which is so fragile [...]. In a city, we teach kids to save the planet, but they are disconnected and, if I can use this expression, ultimately divorced. The life of people, kids and teachers in Lucre is really affected by the change in the climate and the effects of what we globally call global warming [...]. Here, there is a need to daily cope with the practical problems such as water consumption, quality water, pesticides in agriculture, etc.” (05/2013, Tom Jolly, Director of GlobalEd).

In addition, the socio-economic and cultural context of Lucre was considered problematic. As emphasized by two teachers:

“... to teach in this context has its own peculiarities. Here pupils receive less stimuli from the family and other educative institutions [...]” (04/2008, Teacher in Lucre).

“In addition, there are problems with healthy and correct eating habits, as well as with hygienic conditions...” (04/2008, Teacher in Lucre).

We contend that Tom Jolly acted as an instigator of the process of sensitization (Freire, 2005) in the school with regard to environmental and sustainable issues. In the words of one interviewee, Tom’s intervention was “a stimulus for thinking about these [environmental] issues [...]. For us, the [Lucre] Project [was] a shining light on the horizon; a beacon that guides” (04/2008, Teacher of Lucre). In particular, it appears that Tom’s involvement nudged the processes of exposing and reflecting on these issues in such a way that a potential for praxis, in the form of including sustainability in the teaching curriculum, could emerge (Freire 2005; Bebbington et al., 2007).

Our analysis suggests that the project of teaching sustainable development in the school was initiated because it was seen as the “right thing to do” (see above quotation) to cope with concerns of the community of Lucre over future sustainability-related insecurities, instabilities and uncertainties. These concerns, drawn from their socio-cultural-environmental context, formed part of the limiting-situations of the Lucrean people. Understanding these limiting-situations also formed the basis for dialogues about aspirations and hope. The pre-design project dialogues problematised the Lucrean world and its limiting conditions in order to provoke critical reflection and encourage further actions (Freire, 2005). The pre-project design dialogues’ reference to locally visible changes (e.g. glaciers’ retreat, reduction of water in rivers, etc.) to their natural environment, acted as powerful mediating objects (Miller & O’Leary, 2007) which facilitated local acceptance of the project to introduce and embed sustainability thinking and actions into the school curriculum and wider community.

4.2. Teaching and embedding Sustainable Development in Lucre: Project Design Encounters and Accounts

“To address some of the problematic issues that arise from the concept of sustainable development, we have to change how, what and why to teach...” (09/2008, Tom Jolly, Director of GlobalEd).

It was during the project design phase that the purpose, scope and contours of the Lucre Project were established through a series of dialogical encounters led initially by Tom Jolly. Considerable emphasis was placed on how to codify, i.e. to represent (Freire, 2005), sustainability thinking and actions in locally meaningful terms. The importance of creating a bespoke project designed for Lucre was seen as critical to any future sustainable transformation. This required educating the teachers in sustainability thinking and action in ways that allowed them to understand, problematise and critically analyse the unsustainable limit-situations of Lucre. In Tom’s words, his primary role was to:

“Teach teachers to be able to teach the unknown and unpredictable, i.e. teach how to deal with the effects and consequences of un-sustainability in their everyday life [...]. That is very tricky [...]. Teachers should be more than just teachers; they should be facilitators of the process of learning and understanding of their kids. The context is really the most important thing. To teach sustainable development in a city of our [developed] world is much different from teaching in a region/countryside so fragile like Peru and Lucre [...]. Take for example the issue of recycling. Is it really sustainable what we do in our countries [Italy or UK]? What recycling are we speaking about? What does it mean by recycling in a rural area such as Lucre? How should we teach/educate recycling? I do not give any answers for Lucre [...]. When I went to the school, I did not have a pre-arranged set of data or programme; but I went with blank paper on which I wrote two words: challenges/needs and opportunities. My job [was] to listen and to help [them] to build capacity and confidence to find their own way to deal with such problematic issues.” (05/2013, Tom Jolly, Director of GlobalEd).

The external activist role in this phase of the Lucre Project was to facilitate the teachers to understand and work out their own unique way to address their problems and to inspire and build faith in ability of the teachers to undertake this complex project. Whilst Tom Jolly had the potential to dictate the design of the Lucre Project, the data gathered in the field suggests that the project

design phase was infused with a dialogic spirit through the promotion of participation, inclusion and local control, via dialogue with (and between) teachers.

This led to the envisaging of sustainability in the context of Lucre as:

“Respect for our environment, preservation of our natural resources (e.g. water, land), healthy living standards and protection of our traditions and cultural heritage” (04/2008, Head Teacher in Lucre).

This definition was explicitly embedded within Lucre’s traditions, culture and historical heritage, which were also to be sustained.

“It is important that next generations appreciate their historical and cultural heritage, because a community which has no memory and respect for its history is without any future and any development...” (04/2008, Head Teacher in Lucre).

The project design phase attempted to facilitate the teachers’ understanding of sustainability thinking and actions. Teachers were given the opportunity to explore how best to embed these into the school curriculum. All educators at the school were introduced to sustainability thinking and actions through a series of visits, seminars, workshops, working groups and lectures. The initial learning activities were purposively organized to “encourage a more in depth understanding of sustainable development and education for sustainable development” (06/2010, Tom Jolly, Director of GlobalEd). However, they were also important in establishing the grounds on which to build the Lucre Project:

“The context where I teach is essential. I like starting from what teachers know and to construct, with them, knowledge. Sustainable development is a concept that helps people to think about and to gather an awareness and understanding.” (06/2010, Tom Jolly, Director of GlobalEd).

These learning activities, which Tom described as “awareness tools”, were designed to “set a challenge for the teachers” (06/2010, Tom Jolly, Director of GlobalEd) and to spur reflection on

“the vast, complex and multifarious concept of sustainable development [...]. A concept that gives a headache when one is confronted with its complexities” (05/2013, Tom Jolly, Director of GlobalEd).

To support these learning activities the teachers in Lucre were partnered with primary school teachers in the UK. These UK teachers, who had been involved in previous GlobalEd projects (see Figure 2), were able to engage with the Peruvian teachers in order to share knowledge, exchange experiences, build capacity and construct new teaching methods. As argued by Tom Jolly, the links between Lucre and the UK schools were an important part of the Lucre Project design, because these “enable[d] a more in depth and bespoke understanding of the global dimension of sustainable development and education for sustainable development.” (06/2010, Tom Jolly, Director of GlobalEd).

The various learning activities (e.g. staff exchanges and visits, workshops, and documents exchange) offered the teachers opportunities to share information, knowledge, (mis)-understanding and doubts about the concepts (and complexity) of sustainability and how it affects Lucre. These activities involved a series of codifying and decodifying (Freire, 2005) dialogues that helped make visible and establish a locally grounded awareness of sustainability thinking and action. These participative dialogues created a framework (Bebbington et al., 2007) for reflection, discussion and action to take place. Thus, the project design encounters helped create the conditions for “problematising” and “codifying” (Freire, 2005) the locally visible un-sustainable state (and change prospects) of the Lucre community. The problematisation/codification, in turn, ignited a process of “mediation” (Miller & O’Leary, 2007) and “critical understanding” (Freire, 2005) of the unsustainable Lucrean world. It was through these mechanisms that sustainability thinking and actions informed the initial design of the Lucre Project to embed sustainability into the school curriculum.

Included in the project design phase was the development of pedagogic tools (or dialogic codifications) to help teachers educate pupils in sustainability thinking and actions. These dialogic codifications, which Tom Jolly described as “implementation tools”, were developed by the teachers and GlobalEd in order to plan, organize and deliver their lessons. In addition, these dialogic codifications were designed to promote mutual learning opportunities through interaction between Peruvian pupils and pupils in their UK partner school. These dialogic codifications were

collected into resource boxes and distributed to the teachers in Lucre (and the UK). These resource boxes contained photo and picture archives, videos, songs, texts, books, case studies, artefacts and information sheets about each artefact. The resource boxes included artefacts from the Andes and their partner's region in the UK. The resource boxes in Lucre were uniquely created to reflect the peculiarities of that community in order to support the pedagogic needs of the Lucrean schoolchildren. These collections of dialogic codifications were co-produced by the external activist (GlobalEd) and the teachers of Lucre (local working group):

"It is important to note that these [resource boxes] are not pre ready-made boxes; but these were prepared and built up together in relation to the needs of the school. Many of the resources and information included [in the boxes] were not [pre-made] as such, but they are constructed together with them [schoolteachers]." (05/2013, Tom Jolly, Director of GlobalEd).

The co-creation of these boxes and their content represented, from the perspective of Freire (2005), the phase of "identification, preparation and provision" of the pedagogic devices for implementing the sustainability project in the Lucre school. The resource boxes contained different dialogic accounts whose purpose was to represent and depict in child-comprehensible medium the problematic issues related to the (un-) sustainability of the Lucrean world. These resource boxes can be considered as an assemblages of codifications of existential local situations (Freire, 2005), which in turn "linked" (Miller & O'Leary, 2007) sustainability issues to the schoolchildren. Thus, by paraphrasing Gray (2013), these accounts helped to bring "the elephant into the classroom" (p. 311), i.e. made sustainability issues something "familiar with which to engage *with* and act *for*" (Contrafatto, 2013, p. 338, emphasis in the original)

4.3. Teaching and embedding Sustainability Thinking and Action in Lucre School: Accounts, Problem-Posing and Solution Exploration.

"The lecture does not seem to be simply a transmission of notions, concepts and ideas [...]. It is very much based on participation and dialogue between children and teachers and between children themselves [...]. Starting from the observation made by the children, the teacher seeks to promote a critical conceptualization of the existing natural environment" (04/2008, Diary of the Observation).

Sustainability, including environmental concerns, was gradually introduced in the subjects taught in Lucre starting with 1st year students and developing in a coherent fashion throughout the school curriculum. For example, in 3rd year classes, the notion of the physical environment was explored in a systemic way. During the field trips to the school, we noted teachers encouraging pupils to observe their local environment and construct depictions and accounts that described its elements, natural features and observable changes. As emphasized by one of the interviewees, this “continuous observation” of the environment is a “key aspect” of the entire Lucre Project (04/2008, Teacher of Lucre).

The importance of making the local environment visible was observed in a 3rd year class in “Environment & Science”, which one of the authors attended. The lesson commenced by posing the pupils two questions: i) Can you describe the environment that you observe? ii) What are the elements that constitute our environment? The pupils were then split into smaller groups to discuss their responses. The pupils then presented their answers to the questions, which formed the basis of the teacher providing a collective codification of Lucre’s natural environment. This codification formed the basis of a class discussion facilitated by the teacher.

The issues covered in one class were explored in other classes and the topics covered in one year were developed in following years. For example, the concept of sustainable development and related topics became the subject of study for 4th, 5th and 6th year classes. Pupil participation and involvement were considered, by teachers of Lucre school, as important components of their sustainability education in order to promote an active interest in the subject area and to enable the pupils to turn their interest into actions. As put by an interviewee:

“In any pedagogic approach I think it is essential to promote participation, starting from the local context in which the children are [...]. I always prefer to start from the notions and knowledge that children already possess and from these to construct more knowledge and understanding [...]. In particular, this is very important when we teach and educate about environmental and sustainable development issues in this context [...]. For me, for us, this [i.e. teaching sustainable development] means to teach to live and behave in order to ensure in the future a decent life for our community and our kids. We teach children to

respect this environment, which is *their* environment” (04/2008, Teacher in Lucre, emphasis added)

Within the sustainable education project in Lucre, it was observed that the dialogic codifications (accounts) contained in the resource boxes were important in facilitating the sense of participation and engagement as well as establishing closeness to sustainability thinking and actions. These accounts were used in lessons to make sustainability thinking and actions visible, recognizable and understandable to children by translating the more abstract aspects of sustainability into concrete, visible and familiar part of their lives. The dialogic accounts allowed the children to decipher (i.e. to decode) the complex interaction between sustainability and everyday life in Lucre.

The decoding of these accounts promoted, in Freirean terms, a process of “awareness-reaching” and critical reflection on Lucre’s limit situations or problematic issues related to unsustainability thinking and actions. These limiting situations were (and are) familiar to the children as they were (and are) things that the children and their community (has) had to cope with. These issues were observed in the visible changes in their natural environment and climatic conditions. In the words of one of the pupils:

“We all have to respect our natural environment [...]. Here in Lucre, our natural environment gives us the food we need and the place where to live. The plants and trees give us fresh air, the mountains and rivers provide water, the land and farming [provide] food [...]. We are worried about the changes and status of our environment” (04/2008, Pupil of the 6th year group in Lucre)

As discussed in the theoretical section, the observation, examination and reflection on the existing limiting situations, which threaten the future of a community, is a pre-condition for “problematizing” and ultimately for “identifying solutions to transcend” these existential limits (Bebbington et al., 2007, p. 364). In turn, the identification of (possible) solutions is *a sine qua non* for praxis to take place (Freire 2005, p. 106). Our analysis of the Lucre Project reveals that these dynamics (i.e. problematisation and solution exploration) created the conditions for action and change to occur. Possible solutions were identified, explored and, then, practical initiatives implemented as an attempt, in the words of an interviewee, of “doing something, although in [our]

small way” (04/2008, Head Teacher in Lucre) to deal with the problematic situations related to the un-sustainability of the community of Lucre.

4.4. Teaching and embedding Sustainability Thinking and Action in Lucre: Praxes, Accounting and Impact dissemination.

“Our commitment (and hope) is to help, through education of the children, to change the approach of the community towards the environment [...]. We would like to build sustainable living in the everyday life of our community. ” (04/2008, Head teacher in Lucre).

“We think it is essential to help children to put in practice what they have learnt during the classes [...]. For example, a series of activities and initiatives have been adopted since the [Lucre] Project started in an attempt to become and act more sustainable” (04/2008, Teacher in Lucre).

Since 2006, several sustainability-related initiatives have been undertaken at the school. These practical initiatives, which formed part of the Lucre Project, allowed pupils to learn by doing. These included:

- A programme of waste recycling with standardised procedures for recycling and disposing of organic and inorganic waste produced in the school. The organic waste has been used to produce compost, sold for use in local agriculture;
- Initiatives for the reduction and efficiency in water usage: procedures were implemented to reduce water consumption. For example, water used for washing hands was collected in a special container and re-used for watering plants and vegetables;
- Organic farming: schoolchildren have been taught how to grow plants and vegetables by adopting organic techniques (e.g. pesticide-free). The school has grown its own organic vegetables and food, which have been used in the school refectory to feed the children.

The organic-farming lessons provided children with the capability to undertake similar activities in their own homes, extending the potential transformation impact beyond the boundaries of the school. Tom Jolly explained that, in his view:

“...gardening is probably one of the most important initiatives. In the school, they grow food and vegetables that are then eaten; but most important, they [children] learn how to grow the same things at home. Traditionally in the community, people grow maize and potatoes. Now the Andes areas are going through a period of unpredictable climate and this has a huge impact on what locals can or cannot grow. At the school, and in particular with this initiative [i.e. gardening], kids are shown and taught how to manage simple protected cultivation (e.g. greenhouse), how to use complimentary/sacrificial plants instead of pesticides and how to grow other vegetables rather than the traditional ones (i.e. maize and potatoes) [...]. [In other words], they teach all these things to the kids so that they can help their parents to be more innovative and responsible when farming. They have as well a homemade system for re-using water. In the community, the amount of water that will be able to be used in the future is more and more unpredictable; and therefore they should learn how to conserve water [...]. Kids are taught about this too” (05/2013, Tom Jolly, Director of GlobalEd).

As well as interpreting the teachers’ dialogic accounts, the children were involved in producing a series of multi-media and culturally relevant representations of the unsustainability of Lucre, possible solutions and the impact of their activities. These representations, which could be considered to be accounts, formed an integral part of the Lucre Project and were observed to fulfil a range of functions. These accounts were part of the processes of learning and enacting the knowledge, gained in the classroom, in the children’s lives outside the school. These accounts included posters, displays, photo-books, newsletters, school open days, festivals and calendars.

The entities of these accounts included a range of problems and risks to the community of Lucre associated with unsustainable thinking or actions. These problematic issues included: water security, agricultural pollutants, deforestation, excessive waste, extreme weather, food insecurity, poor diet and energy insecurity. Within these accounts were references to more sustainable solutions to these assemblages of risks, for example, waste and water recycling, hydropower, organic agriculture, gardening and healthy eating.

The children, supported by teachers, produced posters, leaflets, photo-books and newsletters to illustrate and report on the different initiatives carried out in the school (e.g. recycling, water-conservation, organic farming). These accounts were the children’s way to describe in their own

language, culture and media the issues discussed or activities undertaken in the school (see Photo 1). As such, these accounts were a vehicle to engage with others (e.g. other local schools, local authorities and community) to promote sustainability sensitization campaigns undertaken in the school, for example: water reduction, reducing noise pollution or re-using plastic bottles.

Insert Photo 1 about here (Representation of organic farming)

The Lucre Project also involved pupils participating in activities to “exhibit” what the “kids had learned and done” in their school (06/2013, Tom Jolly, Director of GlobalEd), such as school open days and festivals. The purpose of these activities was to make visible to the children’ families, community and other interested stakeholders the activities carried out in the school. From the analysis undertaken in this paper, it appears that the intention of these accounts of ‘El ninos’ learning was not simply to describe what had happened; but rather these accounts were designed to transform specific aspects of life in Lucre. For example, the school organised a food festival to promote healthy eating behaviour; and an organic farming day to promote more ecological agriculture and other organic-based initiatives.

The use of dialogic-infused accounts supported the process of attaining Lucre Project’s ultimate aim which was to “educate the community to build sustainable living through educating the children” (04/2008, Teacher in Lucre). We contend that the production of relevant accounts acted as a form of mediation to enable further change towards more sustainable praxis in the community of Lucre. As described by a teacher:

“We believe and hope that the [Lucre] Project and the [practical] initiatives can change the mentality of the families of our children and, as a consequence, of our community in the way of living and in the way of doing agriculture and farming. For example, these initiatives demonstrate how important it is to save water and to use organic fertilizers instead of chemical pesticides” (04/2008, Teacher in Lucre).

One novel form of accounting in the Lucre Project was the production by the school, in collaboration with partners schools in the UK¹³, a series of calendars, named “Life in the Andes”¹⁴ (see photo 2).

Insert Photo 2 about here (Example of “Life in the Andes Calendars”)

These calendars contain pictures/drawings and short narratives that illustrated the learning activities undertaken in the schools. Each month portrays a different dimension of sustainability. Selected images from the “Life in the Andes, Calendar 2009” are exhibited below (see Photos 3, 4, 5). The themes illustrated in each calendar reflect the issues related to the “Eight Doorways to achieving sustainable schools by 2020”. The “Sustainable Schools 2020” is a UK Department of Education programme aimed to achieve, through education, sustainable schools by 2020 (see GlobalEd, 2011). The programme is divided in 8 parts, each of which describe the “Doorways” to sustainability and incorporates the following areas: food/drink; energy and water; travel and traffic; purchasing and waste; buildings and grounds; inclusion and participation; local well-being; global dimension.

Insert Photo 3 about here (January, Water- El agua)

Insert Photo 4 about here (March, Energy- La energia)

Insert Photo 5 about here (August, Food and Drink- La alimentacion)

As mentioned above, each month is dedicated to a specific theme. The months of March, May and August (see Photos 3, 4, 5 above) describe respectively the issue related to “el agua” (water), “la energia” (energy) and “la alimentacion” (food and drink). Each section is structured in two parts. The bottom part contains the weeks and days of the specific month (written in Spanish and English). In addition, each month includes a picture drawn by pupils in Lucre that represents how unsustainability thinking and actions manifests itself in Lucre. There is also another drawing from

¹³ Our school in Lucre had strong links with a British primary school located in Cornwell (see Figure 2). This primary school was already a partner of GlobalEd and has been involved in the programme of sustainable development education since early 2000s. The link between the British and Peruvian schools were mediated and promoted by GlobalEd, as integral part of its activities. The UK and Lucre schools actively participated in common initiatives aimed at sharing knowledge and teaching/learning methods as well as at disseminating activities undertaken. The more detail descriptions of the activities carried out by the British primary school and the objectives/outcomes of these activities is out of the scope of the present paper.

¹⁴ The first calendar was published in 2007 and, as far as we are aware, calendars are still produced nowadays.

the UK partner school that is used to juxtapose the situations in Peru and the UK (see top part of the calendar). This drawing provides a visual comparison of how the same unsustainability thinking affected UK pupils in their towns and villages. The drawings depicted in the calendar are the representation through children's eyes of the problematic issues at stake. The comparison between the situation in Peru and the UK is reinforced by two brief narratives (written in English)¹⁵, one from the children in Lucre and one from children in the UK, that problematize the unsustainability of the respective communities. These narratives contained accounts of the actions taken (or necessary to undertake) to improve the sustainability of Lucre.

For example, the sections dedicated to "El agua" (water) and "La energia" (energy) describe the complex interrelationships between energy (e.g. hydro-electricity) produced for the community, the water levels in the rivers and the size of glaciers in the Andes. In particular, these sections represent the Lucrean children's concerns of the implication for the life and prospect of their community due to the visible deglaciation of the Andes and reduction of river water levels. These calendars represent the children's way to understand and illustrate the problematic issues related to the un-sustainability and the consequent need to try and "do something" (Pupil of the 6th year class in Lucre). As reported in the calendar:

"Our rivers throughout the Andes are becoming very polluted with the effluents from towns and cities [...]. As the amount of water in our rivers becomes less, the concentration of those pollutants increase, which leaves us with a chemical soup for drinking water [...]. In the school we are learning how precious water is and how to manage it intelligently" (Life in the Andes, Calendar 2009, January)

Similar considerations are reported in the months of March and August, respectively about energy and food/drink:

"We don't actually use much energy, but what we do use is very inefficient. Our electricity in Peru is mostly generated by hydro-electric power stations that rely on the big rivers we have in the Andes. These however will run dry as the glaciers that feed them eventually

¹⁵ The decision to use English as the language for writing the narrative sections was taken for two reasons. First, this was to encourage the Lucrean children's learning of the English language. Second, the use of English fostered the sale of the calendars in the UK. However, whether, and the extent to which, the use of English hampered the possibility for dialogue with local actors is something that would deserve further consideration.

disappear. We will have to be very aware of renewable energy solutions not only to power our schools but also our homes and businesses of the future” (Life in the Andes, Calendar 2009, March).

“[...]. There are big plans to make Andean farming more efficient which is good idea [...]. The Andes has the potential to make a huge contribution to food security and must be done sustainably. In our school we are learning how we can produce our own food” (Life in the Andes, Calendar 2009, August).

These calendars represent a form of a dialogic codifications (or accounts for sustainable transformation) as they possess many of the attributes associated with dialogic accounting for sustainable transformation (see Table 1 above). We observe that they were used to inspire change and local activism, to attempt to legitimate community action, to help others understand the reasons for the unsustainable state of Lucre, and to expose the contradictions between sustainable and unsustainable thinking. The format of the calendar (i.e. an annual account) allows the presentation of a multi-media, holistic account of the unsustainability of the community. The images and narratives do show the impact of the limited sustainability praxes undertaken in Lucre and were intended to facilitate dialogues and co-operation with other stakeholders. For example, some calendars were exchanged with partner schools in the UK, others donated to local partners associated with Lucre (e.g. local NGOs, local authorities, other schools, etc.) and others sold, mainly in the UK, to raise funds for the Lucre Project.

The images and text contained in each calendar represent the consequences of unsustainable thinking and action in the community of Lucre. It is also possible to observe changes in the unsustainability of Lucre through comparison between the content of each of the annual calendars. The calendars can also be seen to explore other more sustainable future scenarios for Lucre. In particular, these calendars can be seen as acting as effective mediating instruments (Miller & O’Leary, 2007) between sustainability concepts and life in Lucre and provide a space for creative expression.

Summary

Collectively the accounts discussed in the sub-section above described, communicated and reported to the pupils and others the issues debated, knowledge gained and the activities undertaken during the Lucre Project. These accounts were both the result of dialogic learning

processes and an opportunity for further dialogic problematisation and solution exploration in the wider community. These were not formal or standardized forms of social and environmental accounts, rather these were locally relevant, homemade and creative practices to represent, make visible and make understandable to others (Miller & O’Leary, 2007) the problems of unsustainability in Lucre and how to begin embedding sustainability thinking and actions. Paraphrasing Miller et al., (2008), these accounts represented the “localised metrics and language” (p. 963), transcending the Lucre school boundaries, through which the schoolchildren and teachers were able to communicate, interact and act with other stakeholders: children’s families, local and regional communities, and other local schools. From the theoretical perspective adopted in this paper, these locally produced accounts represented culturally relevant codifications of the concrete manifestations of unsustainability in Lucre. In terms of Freire, these codifications played a pivotal role as mediation means that bridged (Miller et al., 2008) the school community with others (e.g. families, local partners, etc.). In particular, from the empirical analysis undertaken in this paper, it appears that in the process ‘el ninos’ transformed themselves from pupils learning about sustainability to ‘teachers’ teaching the community and inspiring others to take action:

“My hope is that through what we are learning and doing we can help people of [our] community to understand and act towards the respect and preservation of our *medio-ambiente* [i.e. our environment]. [...]. This is the source of [our] life” (04/2008, Pupil of the 6th year class in Lucre).

5. Case evaluation and concluding comments

“The changes in the community are small stages of a wider [sustainable] change [...]. The [Lucre] Project has produced some visible impacts and changes. Sure, children are growing foods in a more organic ways also at home and they are acting in a more responsible ways [...]. The local authority has adopted a recycling system, which before it did not have. Now the process of recycling is certainly more efficient and less impacting.” (05/2013, Tom Jolly, Director of GlobalEd).

Our analysis reveals that the Lucre Project did result in some transformation in Lucre. In the interviews with the children, the children's answers¹⁶ suggested that the project had stimulated their critical thinking and promoted reflections about the unsustainability of Lucre (Freire, 2005). In particular, they emphasized the fact that the Lucre Project had helped them to "see things from a different light" (04/2008, Pupils in Lucre) and to understand the importance of protecting their local environment.

The interviews with teachers contained statements that described strong hopes and aspirations for the future lives of the children and great confidence in the ability of the school, and education, to transform a community. The teachers perceived the school as a significant and influential component of the social life of Lucre. As put by Tom Jolly, in rural settings schools

"are really the pulsing heart and the core of the communities. The school [in our study], the teachers and the initiatives undertaken by them are esteemed and seen as a point of reference. These are examples of good practice (for the community) to carry out their economic and social activities: e.g. farming" (05/2013, Tom Jolly, Director of GlobalEd).

This local empowerment was observed by the establishment of a network of 15 teaching institutions, including pre-schools as well as secondary schools in the Cusco Valley region (the so-called 'Val de Sur' Project), inspired by the Lucre Project and independent of any involvement from GlobalEd. These institutions have voluntarily come together to introduce sustainability issues into their curricula. As emphasized by one of the teachers (in a conversation held during the second visit to the site in 2011), this network provided the opportunity to share know-how, resources and good practice locally. As a result, there has been an increase in the participation of schools in addressing some of the sustainability challenges at a regional level.

From our analysis, it appears that the Lucre Project has enabled a degree of transformation in Lucre and the surrounding area. However, it cannot be concluded that Lucre is now sustainable and almost all interviewees stated that there was much more still to do. Although some changes in the wider community were observable (e.g. the sensitisation campaigns, changes in waste

¹⁶ During the interview and conversations pupils were asked to describe: i) the activities in which they were involved; ii) their perceptions of the state and prospect of the natural environment; iii) their aspirations in terms of future job and career; and iv) their hopes and beliefs for the future.

management), these changes were considered by the participants as the initial steps in a wider programme of sustainable change. In the words of Tom Jolly:

“Are these changes huge? Certainly not [...]. But change is a slow process and time is needed. We [they] have just started...” (06/2013, Tom Jolly, Director of GlobalEd).

The Lucre Project seems to possess many of the attributes associated with dialogic activism and followed the generic pathways outlined in Figure 1. The interviews with teachers, pupils, documentary analysis and direct observations indicated that the Lucre Project was beginning to achieve some of its objectives, i.e. “educate the community to build sustainable living through educating the children” (Teacher in Lucre). However, it is not possible to conclude that it has achieved these objectives, as the project is long-term and still unfolding.

There were signs of transformative praxes away from unsustainability and, in particular, the calendars (and the other accounts) suggest the existence of well-developed, locally grounded understanding of the problems arising from unsustainability thinking and actions and knowledge of more sustainable alternatives. Hence, from the analysis undertaken, it would appear that there is sustainable transformation beginning to emerge in Lucre and that the use of dialogic accounts/codifications have been important in facilitating this change process.

As illustrated in Table 3 (see section 4) accounts were integral to, and embedded within, this transformative process and fulfilled key roles. The use of accounts appeared to be significant in the evolution of the Lucre Project and extending its impact in the wider community (of Lucre and beyond). These accounts possessed many of the attributes of dialogic codifications (see Table 1) and appeared to be associated with examples of sustainable transformation actions. The relationship between the accounts and actions is very difficult to untangle, but in our analysis, is consistent with the theory of dialogic activism (Thomson & Bebbington, 2004, 2005; Freire, 2005)

Accounts were involved in this project of activism, but appeared to be largely sub-ordinated to the sustainability discourse and community values. These accounts were multi-dimensional and multi-media. These were co-created by the community for their purposes and were designed to problematise, raise consciousness, re-evaluate their gifts and capabilities, identify feasible solutions, inspire actions, legitimize praxis and communicate the changes to others. These

accounts were very different from corporate social responsibility reports or sets of sustainable development indicators, but appeared to be effective and, therefore, worthy of further consideration. It would be wrong to argue Lucre is now a sustainable community, but we would argue that the community is more knowledgeable, less fatalistic and more resilient. The prospects of their way of life sustaining into the future appear to be improved.

The analysis undertaken in this paper suggests that there are possible positive roles for sustainable accounting (and accounts) that are specifically designed for transforming communities. This observation poses the question as to what extent existing sustainable accounting practices could transform communities (and what communities they would build). It would be an interesting exercise to examine the assumed community that underpins different sustainability accounting practices. This thought exercise would also identify those communities excluded from these practices and to what extent these practices could contribute to a process of de-communitization (e.g. increasing the distance between, for example, a multi-national corporation and oppressed communities). This exercise was not undertaken in this paper, but is an area of further research that will be considered by the authors. The Lucre school case study would suggest that greater communitization could increase the potential of sustainable accounting to produce positive effects towards more sustainable transformative praxes.

From the perspective of accounting and accounting for sustainability, these results provide a basis for further potential investigation. For example, it would be useful to investigate how and to what extent it is feasible and desirable to conjugate more traditional accounting activities with practical sustainable experiments (Contrafatto, 2013). What practical initiatives could be adopted? How should these be constructed? It does appear that we can learn much from the 'el ninos' in the mountains in Peru. The value of the Lucre Project has already been recognised in the Cusco Sacred Valley where, as mentioned above, 14 other local schools are now engaged in similar projects. This has created a wider learning community with greater potential for sustainable transformation and for further expansion in Peru and beyond. It would appear that there is considerable value in examining other transformative action processes with the open gaze of children to identify these alternative accounting practices that play a positive role in social movements.

Another observation worthy of further research is considering the development from 'accounts' to 'en-counts' or 'accounts of dialogic encounters'. Social *en-counts*, rather than being just ways of a-

counting to others (from the Latin 'a' (to others) and 'count' (account)), represent forms of confrontational accounts, i.e. encounters between (i.e. en) and with others, through which to discuss, make visible and gather a dialogic understanding of the issues at stake. Such forms of en-counts could be designed to allow the engagement with and between different stakeholders. In our case analysis, it appears that the various initiatives organized in the pre-teaching phase (i.e. workshops, seminars, discussion groups) resemble some forms of social *en-counts* that gave the schoolteachers an opportunity to share information, knowledge, (mis)-understanding and concerns to visualize and further reflect on the implications of teaching (and embedding) sustainable development in the context of Lucre.

Finally, the findings of our case study suggest that accounts produced and interpreted using the principles of dialogic activism can be supportive in transformation projects. Therefore, we conclude that there is merit in drawing upon dialogic codifications to inform the design of accounts for sustainable transformation. The conceptual framework outlined in Figure 1, which integrates critical pedagogy and sustainable accounting, could inform the development of effective accounts for sustainable transformation and evaluate the transformative potential of other sustainable accounting practices. However, any evaluation has also to be considered in the context of any associated transformative projects. There does appear to be opportunities for social accountants to support community activists in constructing dialogic accounts with the potential to contribute positively to specific action projects. Further research into accounts used in different activism projects is needed in order to explore whether and to what extent certain types of codifications are more effective than others and to collect examples of accounts to add to the assemblage of possible social and environmental accounting practices.

References

- Ahrens, T., & Chapman, C. (2006). Doing qualitative field research in management accounting: Positioning data to contribute to theory. *Accounting, Organizations and Society*, 31(8), pp. 819-841.
- Bebbington, J., & Larrinaga, C. (2014). Accounting and sustainable development: An exploration. *Accounting, Organisations and Society*, in press.
- Bebbington, J., & Thomson, I. (2007). Social and environmental accounting, auditing and reporting: a potential source of organizational risk governance? *Environment and Planning C*. Vol 25(1) pp. 38-55.
- Bebbington, J., Brown, J., Frame, B., & Thomson, I. (2007). Theorizing engagement: the potential of a critical dialogic approach. *Accounting, Auditing and Accountability Journal*, 20 (3), pp.356-381.
- Cigarán Paz, N. (2004). Bridging gaps in dealing with climate change: the case of Peru, available at: http://unfccc.int/files/meetings/cop_10/at_the_kiosk/15_dec_wednesday/.
- Contrafatto, M. (2013). Utopia” and “Passion”: A Commentary on Sustainability + Accounting Education: The Elephant in the Classroom, *Accounting Education: an international journal*, 22 (4), pp. 336-339.
- Contrafatto, M., and Bebbington, J., (2012), “Developing techniques for stewardship: A Scottish study” in Accounting for Social Value (Mook, L. ed) (University of Toronto Press: Toronto).
- Cooper, C. (1992). The Non and Nom of Accounting for (M)other Nature. *Accounting, Auditing and Accountability Journal*, 15(3), 16–39.
- Cooper, C., Taylor, P., Smith, N., & Catchpowle, L. (2005). A discussion of the political potential of social accounting. *Critical Perspectives on Accounting*, 16(7), 951–974.
- Creswell, J. (1998). *Qualitative inquiry and research design: choosing among five traditions*. London: Sage publications.
- Crossley, N. (2003). Even newer social movements? Anti-corporate protests, capitalist crises and the remoralization of society. *Organization*, 10(2): 287–307.
- Den Hond, F., & De Bakker, F. G. (2007). Ideologically motivated activism: How activist groups influence corporate social change activities. *Academy of Management Review*, 32(3), 901-924.
- Dey, C., Russell, S., & Thomson, I. (forthcoming). Activism, Arenas and Accounts in Conflicts Over Tobacco Control. *Accounting, Auditing and Accountability Journal*.
- Dillard, J., & Roslender, R. (2011). Taking pluralism seriously: embedded moralities in management accounting and control systems. *Critical Perspectives on Accounting*, 22(2):135-47.
- Everett, J. (2004). Exploring (false) dualisms for environmental accounting praxis. *Critical Perspectives on Accounting*, 15(8), 1061–84.

Fraser, B. (2009). Climate Change Impacts Revealed: Disease in Peru, Scientific American, available at: <http://www.scientificamerican.com/article.cfm?id=climate-change-disease-peru>. (accessed May 2011)

Freire, P. (2005). *The Pedagogy of the Oppressed*, Continuum, New York, USA.

Gallhofer, S., Haslam, J., Monk, E. & Roberts, C. (2006). The Emancipatory Potential of Online Reporting: The Case of Counter Accounting. *Accounting, Auditing and Accountability Journal*, 19 (5), 681-718.

Gini, C. (1936). On the Measure of Concentration with Special Reference to Income and Statistics, *Colorado College Publication*, General Series No. 208, pp.73-79.

Global Education for Sustainable Development (GlobalEd), available at: <http://www.globaled.org.uk/>. (Accessed June 2011)

Gray, R.H. (1992). Accounting and environmentalism: an exploration of the challenge of gently accounting for accountability, transparency and sustainability. *Accounting, Organizations and Society*, 17(5), pp. 399-425.

Gray R.H. (2002). The Social Accounting Project and Accounting Organization and Society: Privileging Engagement, Imaginings, New Accountings and Pragmatism over Critique. *Accounting, Organizations and Society*, 27(7), 687-707

Gray, R.H. (2010). Is accounting for sustainability actually accounting for sustainability...and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society*, 35(1), 47-62.

Gray, R.H. (2013). Sustainability + Accounting Education: The elephant in the classroom. *Accounting Education: An International Journal*, 22 (4), pp. 308-332.

Gray. R.H, Brennan, A. & Malpas, J. (2014). New Accounting: Towards a reframing of social accounts. *Accounting Forum*, in press.

Harte, G., & Owen, D. (1987). Fighting de-industrialisation: the role of local government social audits. *Accounting, Organisations and Society*, Vol. 12, No. 2, p 123-141.

Hegglin, E. & Huggel, C. (2008). An integrated Assessment of Vulnerability to Glacial Hazards. A Case Study in the Cordillera Blanca, Peru. *Mountain Research and Development*, 28(3/4), 299-309.

Hennessy, H. (2005). Peru's glaciers in retreat, BBC News, available at: <http://news.bbc.co.uk/1/hi/world/americas/4720621.stm>. (Accessed June 2011)

Huckle, J. & Sterling, S. (1996). *Education for Sustainability*, Earthscan, London

Hofstadter, C. (2009). Climate change affecting Peru right now, Oxfam America, available at: <http://www.oxfamamerica.org/articles/climate-change-affecting-peru-right-now>. (Accessed June 2011)

IPCC (2013). Climate Change 2013: The Physical Science Basis.

Jack, L., Davison, J. & Craig, R. (2013). 'The power of accounting communication' *The Routledge Companion to Accounting Communication*. Jack, L., Davison, J. & Craig, R. (eds.). London and New York: Routledge, p. 3-6.

Kneip, V. (2013). Protest Campaigns and Corporations: Cooperative Conflicts? *Journal of business ethics*, 118(1), 189-202.

Kurunmäki, L., & Miller, P. (2011). Regulatory hybrids: partnerships, budgeting and modernizing government. *Management Accounting Research*, 22(4), pp. 220–241.

Larepublica, (2011). available at: <http://www.larepublica.pe/11-01-2011/pobreza-se-redujo-30-en-el-2010-0> . (Accessed April 2011)

Lehman, G. (2001). Reclaiming the public sphere: problems and prospects for corporate social and environmental accounting. *Critical Perspectives on Accounting*, 12 (6), pp. 713-733.

Lehman, G. (2002). Global Accountability and Sustainability: Research Prospects. *Accounting Forum*, 26 (3/4), pp. 219-232.

Mark, B. G. (2009). Climate change & tropical Andean glaciers, available on: http://www.aast.cl/docs/glaciares/BryanMark_ClimChange&tropicalAndeanGlaciers_Chile09.pdf. (Accessed June 2011),

Napier, C. (1993). The Allegory of the Field: Accounting, Cartography and Representation, presented at Critical Perspectives of Accounting Conference, April, 1993, New York.

Miller, P., Kurunmäki, L., & O'Leary, T. (2008). Accounting, hybrids and the management of Risk. *Accounting, Organizations and Society*, 33(7/8), pp. 942 – 967.

Miller, P., & O'Leary, T. (2007). Mediating instruments and making markets: Capital budgeting, science and the economy. *Accounting, Organizations and Society*, 32, pp. 701 – 734.

Neu, D. (2000). Accounting and accountability relations: Colonization, genocide and Canada's first nations. *Accounting, Auditing & Accountability Journal*, 13, pp. 268–288.

Neu, D. (2006). Accounting for public space. *Accounting, Organizations and Society*, 31, pp. 391–414.

Silverman, D. (2011). *Interpreting Qualitative Data*, Fourth Edition. London: Sage Publications.

Solomon, J. and Thomson, I. (2009) 'Satanic Mills: An Illustration of Victorian External Environmental Accounting?' *Accounting Forum*. 33(1), pp. 74-87

Sterling, S. (2001). *Sustainable education: re-visioning learning and change*, Schumacher Briefing No 6, Green Books.

Thomson, I., & Bebbington, J. (2004). It doesn't matter what you teach? *Critical Perspectives on Accounting*, 15(4/5), pp.609-628.

Thomson, I., & Bebbington, J. (2005). Corporate social reporting: a pedagogic evaluation. *Critical Perspectives on Accounting*, 16 (5), pp. 507-533.

Thomson, I., Grubnic, S., & Georgakopolous, G. (2014) Exploring Accounting and Sustainability Hybridisation. *Accounting, Organisation and Society*, in press.

UNDP, (2010). Human Development Report 2010, 20th Edition, available on: http://hdr.undp.org/en/media/HDR_2010_EN_Complete_reprint.pdf. (Accessed June 2011)

UNDP, available at: <http://hdrstats.undp.org/en/indicators/161.html>. (Accessed May, 2011)

Wise, M. (1988). Mediating Machines. *Science in Context*, 2(1) 77-113

Wise, N., & Smith, C. (1989a). Work and waste: Political Economy and natural philosophy in nineteenth century Britain (1). *History of Science* xxvii, 263–301.

Wise, N., & Smith, C. (1989b). Work and waste: Political Economy and natural philosophy in nineteenth century Britain (2). *History of Science* xxvii, 391–449.

Wise, N., & Smith, C. (1990). Work and waste: Political Economy and natural philosophy in nineteenth century Britain (3). *History of Science* xxviii, 221–256.

World Bank, (2011). Available at: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG> (accessed May 2011).